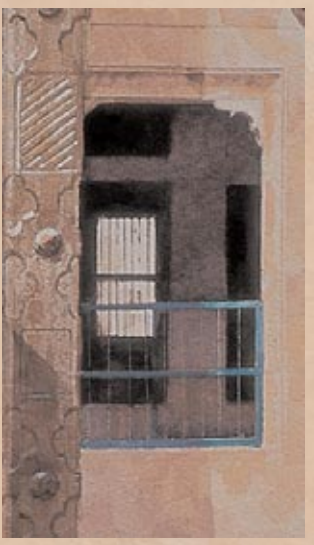
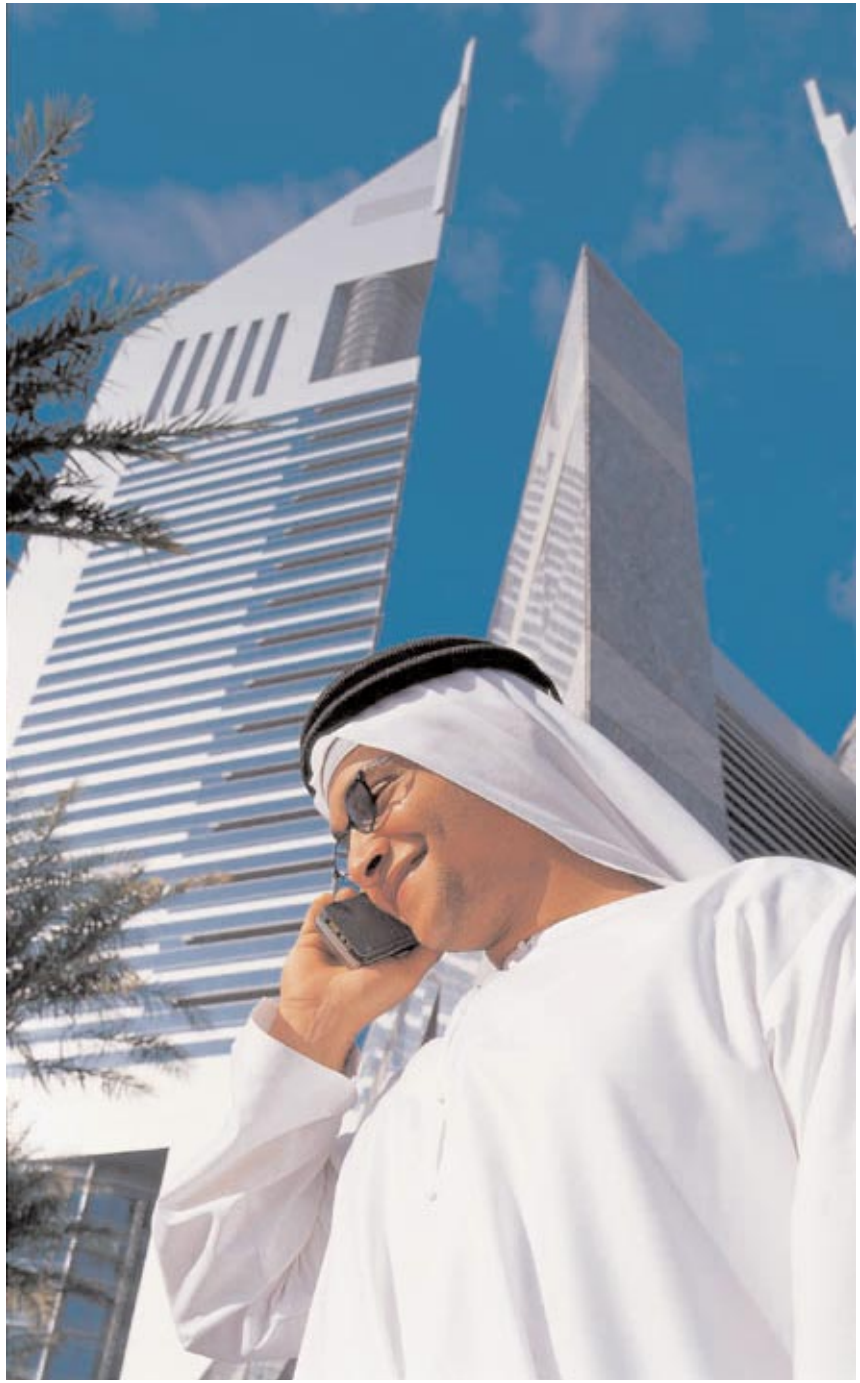


INFRASTRUCTURE



URBAN DEVELOPMENT

TO MOST READERS OF THIS BOOK, the UAE's metamorphosis from a group of disparate, disadvantaged, desert emirates to a united, comprehensively developed, modern nation is already well known. Nevertheless it is worth recalling the basic facts lest we forget either the short time frame in which these changes have occurred, or the enormity of the transformation that has taken place. In 1971, when the United Arab Emirates was established, the country's infrastructure was rudimentary. Poor roads, few schools, and inadequate hospitals presented immediate challenges to a government determined to create better lives for all its citizens, and to do so without delay. Electricity and water supplies were unreliable and severely limited, telegrams were the main method of overseas communication, telephones were regarded as a luxury and the postal service faced serious difficulties.

All of the UAE's older people have vivid memories of these harder times, and of the difficulties they faced in their daily lives, but the younger generation has been brought up under entirely different conditions and many find it hard to imagine just how tough life was in the recent past.

HOUSING

The Government supports various housing schemes for its citizens. It donates land for house building and provides grants, house plans and long-term loans to help people build their own homes. A number of federal and local bodies, including the Ministry of Public Works and Housing, the Sheikh Zayed Housing Programme, the Abu Dhabi Social Services and Commercial Buildings Department (Khalifa Committee), the Abu Dhabi Housing Loan Authority, the Dubai Programme for Financing Private Housing and the individual Municipalities, are involved in this process.

Since 1971 the federal Ministry of Public Works and Housing has built 7839 low-cost homes for free distribution to citizens, many in rural areas, as well as another 9200 residential units. The Sheikh Zayed Housing Programme, established on the orders of the President in 1999, with an annual budget of

Dh642 million, was created to provide loans for those citizens with a monthly income of less than Dh10,000. Under the scheme, recipients are provided with an interest-free loan of Dh500,000, to be repaid over a 25 year period. Between the beginning of 2000 and the end of July 2001, 3109 families received loans under the programme, at a total cost of Dh1320 million, and with demand rising, the annual budget of the programme has now been increased to almost Dh766 million. The Fund is supported both by UAE Federal Government and by direct contributions from the Emirates Telecommunications Corporation (ETISALAT). This rather unusual arrangement, whereby the telecommunications company supports the national development programme, is based upon agreements that were put in place when ETISALAT was established 25 years ago. During its silver jubilee year of 2001, the company announced a payment of Dh98 million to the fund, bringing its total contribution to Dh312 million. ETISALAT also makes other financial contributions to the federal budget, amounting to Dh1.89 billion in 2001. This linkage between government-licensed revenue earning facilities on the one hand (in this case the telecommunications provider), and financing of infrastructure projects on the other, is a key element in the UAE's growth strategy.

The Abu Dhabi Department of Social Services and Commercial Buildings, popularly known as the Sheikh Khalifa Committee, oversee another major, and older, programme. Up to the end of 2000, this Department had spent a total of Dh33 billion to build around 6000 buildings with around 93,000 apartments. These buildings have been allocated to citizens, with a lengthy repayment period and, in most cases, the Department also undertakes management of the buildings.

A third programme, known as the residential Loans Corporation, was established in 1991. It has thus far extended seven tranches of loans to citizens in Abu Dhabi, Al Ain and the Western Region, for a total amount in excess of Dh4.4 billion. Initially the loans, made to enable citizens to build their own houses, amounted to Dh0.9 million per person, but was increased on the orders of Abu Dhabi Crown Prince, Sheikh Khalifa bin Zayed Al Nahyan, in September 2000, to Dh1.2 million.

The Dh960 million first phase of the Ruwais Housing Complex in Abu Dhabi is due to be completed in July 2002. The first 12-storey buildings (108 apartments) in package two, and five multi-storey buildings (76 apartments) in package three, were completed in August 2001 when they were handed over to Ruwais Housing Department. The overall project comprises family apartments, bachelor apartments, schools, mosques, tennis courts, a football field and a large central park.

In Dubai, the Dubai Construction Council makes loans at a rate of one per cent interest. It has thus far completed 550 projects, with a total number of 6200 residential units. Another special fund, established on the orders of Dubai Ruler and UAE Vice President and Prime Minister Sheikh Maktoum bin Rashid Al Maktoum in 1993 is the Dubai Programme for Financing Private Housing, administered by Emirates Bank International on behalf of the Dubai government. By late 2001 this had received 11,868 applications of which 9493 were for building new houses, 2027 for purchasing existing houses, and 348 for maintenance and expansion of privately owned dwellings. From this list of applicants 3538 received approvals leading to financial assistance totalling Dh1.5 billion. Since its inception the housing scheme has financed 2699 projects, provided Dh821 million in loans and been instrumental in building 2229 houses. The programme has also undertaken two major projects for building 497 modern villas at Al Barsha and Al Warqa. With population steadily rising, the need for more housing is encouraging the Programme administrators to examine new options for financing the scheme. In order to meet the residential needs of the community up to 2015, an investment of around Dh7 billion will be required. Options under consideration include amendments to the housing policy; reduction in the area of housing plots; ensuring priority is given to the most needy sectors; establishment of specialised real estate funds and encouragement of private investment in the housing sector.

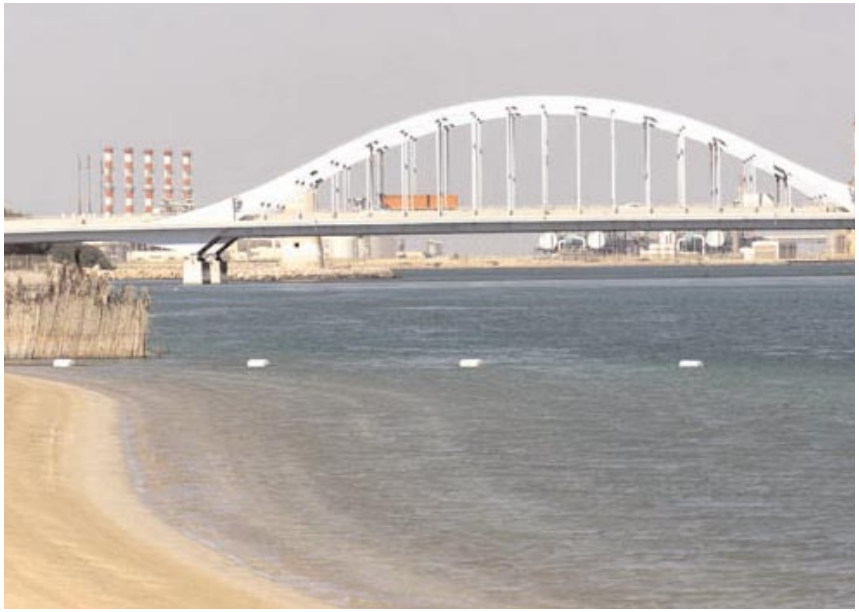
By no means all of the housing activity is taking place in Abu Dhabi and Dubai. Every emirate is involved in providing land and houses for its people. In some cases quite radical solutions are being considered to solve a mounting housing crisis. For example, the Ra's al-Khaimah Department of Lands, in concert with the local Municipality, is considering plans for construction of a new city adjacent to the old city area of Ra's al-Khaimah. This follows the realisation that the old city, originally intended to house around 20,000 people, is bulging at the seams with more than 80,000. Meanwhile the total population of Ra's al-Khaimah emirate has grown to 171,000. In Sharjah, over 6000 houses have been built under another loan programme for citizens, with 13,000 plots of land so far allocated, along with a loan of Dh200,000 per person. The Sharjah local housing budget in 1990 was Dh500 million but rose to over Dh1 billion in the year 2000.

ROADS

After housing, good roads are a top priority of the UAE Government. The contrast between today's extensive network of multi-lane, smooth-surfaced highways and the bumpy sandy tracks that existed prior to 1971 is almost too great to comprehend. Fortunately there are a few good photographs that can jog memories of what it was like to drive, for example, from Abu Dhabi to Al Ain in the 1960s. Long cross-country journeys at this time were still frequently conducted on camel back! People literally died because it took too long to get them to hospitals where medical care was available. Distances now covered in less than an hour frequently took days to achieve.

Today the residents of Ra's al-Khaimah, Fujairah or other Northern Emirates think nothing of commuting to Abu Dhabi for business or work. Some do so on a daily basis while others stay the week in Abu Dhabi and return to their homes for the weekend. Tourists who fly into Dubai airport are whisked within minutes to hotels on what were once remote shorelines and quite often they are effortlessly transported to holiday locations in other emirates. Not only have the roads enabled people to move swiftly from emirate to emirate, but they have also opened up many new areas of the country to development. Ports and industrial areas have been built far from the main cities, airports have been constructed over swathes of desert that were once a day's camel ride from the town and are now half an hour's drive away from the city centre. Sections of coastline that were until recently so remote that one could camp along their shores and not see a person for days on end, now house massive tourist centres and some of the finest hotels in the world. Mountainous areas of the country that once challenged the toughest climbers and provided inaccessible refuges for endangered wildlife are now reachable in air-conditioned comfort over zigzagging roads that thrill drivers with their views of nearby cities and extensive desert plains. All of this is due to the country's magnificent road network.

Impressive though these achievements are, the Government is continuing to focus on improvements in the road network so that future demand can be met. The Ministry of Public Works and Housing has embarked on a ten-year plan to upgrade the road network in the country at a cost of Dh1 billion. The plan, to be executed in three phases, aims to end traffic congestion and reduce accidents. During the last 15 years traffic has increased by between 5 and 13 per cent per annum as a result of rapid economic development; this increase has imposed a serious burden on many of the existing roads.



PUBLIC TRANSPORT

Passengers on Abu Dhabi's public transport system can now use pre-paid smart cards instead of traditional tickets. Following a decision to lower bus fares thousands of commuters have changed from use of shared taxis to buses. As part of its automation plan, the Abu Dhabi Public Transport Department recently launched its web site, which displays information on how to subscribe to the smart cards, bus timetables, route-maps, etc. The department has also introduced a first-class fleet of new buses to replace 300 of the older vehicles. Fares were halved from Dh2 to Dh1 for all routes within the capital.

The Dubai government issued new regulations regarding public transport within the emirate. These state that Dubai Municipality alone will undertake the task of transporting passengers by means of public transport vehicles inside the emirate. The civic body will also organise and control the intra-emirate and inter-emirate transport services offered by others using various types of vehicles. In addition, the Municipality will plan and set up public transport routes in various areas of the emirate and operate sufficient vehicles to meet the needs of passengers. It will purchase, own and rent out these vehicles for the purpose of public transport. The order states that the Municipality will also have its own workshops for the maintenance and repairing of its vehicles. It will set up bus stations and waiting areas for public transport vehicles to enable passengers to embark and disembark at locations specified by the civic body. In accordance with the order, the Municipality will issue licences to others to run intra-emirate and inter-emirate public transport services with a specified number of vehicles.

ELECTRICITY AND WATER

The UAE has the second largest per capita water consumption in the world after the United States. Production and supply of water and power remain top priorities in the UAE's development programme. Per head consumption of water in the UAE is between 100 and 120 gallons per day, which is very high in view of the scarce water resources in the country. The demand for water in the country has grown at a slightly faster rate than that for electricity. According to estimates the UAE will require 10,400 MW of electricity by the year 2010. The country leads regional development in this sector, with an overwhelming 51.05 per cent share of overall activity in the GCC, which together houses projects worth US$10.35 billion. Even at the Middle East level, projects in the UAE represent 31.33 per cent of the total US$16.86 billion. Measures to meet the challenges of electricity and water production involve partial privatisation of the sector and the creation of a Federal Electricity and Water Authority (FEWA) by the Ministry of Electricity and Water. Four main authorities are being set up to independently plan power generation and distribution systems.

ABU DHABI WATER AND ELECTRICITY SECTOR

The Abu Dhabi Water and Electricity Authority (ADWEA) continued during the year to meet rising demand for water and electricity. It placed considerable emphasis on privatisation initiatives as a means to meet its goals.

In the later part of 2000 there were six generation and desalination companies in the Abu Dhabi Water and Electricity Sector, the latest one being a joint venture between ADWEA and Gulf Total Tractebel located at Taweelah. This was the first Independent Water and Power Producer (IWPP) in the emirate to acquire existing assets from ADWEA. Bainounah Power Company previously managed these assets, located at the site known as Taweelah A1. In September 2000 the Regulation and Supervision Bureau, responsible for overseeing the sector, granted a licence to Gulf Total Tractebel Power Company (GTTPC) to produce 84.76 million gallons per day (mgpd) of desalinated water with an installed electricity capacity of 1431 megawatts (MW). Existing assets transferred to GTTPC were a desalination plant with a water capacity of 29 mgpd and generation units with an installed capacity of 255 MW.

In November 2001 Shuweihat CMS International Power, a joint venture between America's CMS, International Power (the overseas arm of UK-based National Power) and ADWEA was established and registered in Abu Dhabi. A power generation and desalination licence was issued for the production of 1500 MW of electricity and 100 mgpd of desalinated water. Shuweihat is a brown field site close to Jebel Dhanna in the Western Region of Abu Dhabi emirate. ADWEA retains a 60 per cent holding in Shuweihat CMS IP with the remaining 40 per cent divided evenly between CMS and International Power. Commercial production is planned to start in mid-2004.

With regard to existing power stations owned by ADWEA, a further desalination plant was commissioned at Al Mirfa Power Company, to provide an extra 22 mgpd of water in the Western Region. Work is also underway to expand Umm al-Nar desalination capacity.

Further developments in the provision of extra generation have seen an agreement between TRANSCO transmission company of Abu Dhabi and TAKREER, part of the ADNOC Group, for the potential to receive or transmit power between the two companies at Ruwais. The connection is at a 220kV substation and provides for the import or export of up to 300 MW. There are additional advantages for both parties in terms of system security especially under high load and fault conditions.

The above investments aim to keep pace with increasing demand in the Emirate of Abu Dhabi. Up until 2004 it is predicted that the medium-term peak demand for electricity will show an average annual growth rate in excess of 10 per cent. For water the medium average growth forecast is set to be in excess of 8 per cent per annum. It is expected that privatisation initiatives will continue to dominate the production end of the water and electricity supply chain for the foreseeable future.

A new control and despatch centre was commissioned by TRANSCO, which enables generation optimising and load forecasting throughout the emirate. Additionally supervisory, control and data acquisition (SCADA) investments now provide a full range of operator focused services, thereby enhancing the modern Abu Dhabi transmission system.

At the other end of the supply chain are water and electricity customers. The responsibility for these customers rests with two companies, namely Abu Dhabi Distribution Company and Al Ain Distribution Company. Both these entities are joint stock companies, currently wholly owned by ADWEA. Downsizing, investment in networks and improvements in customer service standards have resulted in the companies shedding their old bureaucratic image. In particular, advances in sales activities with the purchase of new billing systems and the opening of prestigious customer centres in the cities of Al Ain and Abu Dhabi are a visible feature of improvement for the emirate's 300,000 customers.

ADWEA has sought to strike a balance between driving down whole sector costs and improving operational and customer services performance. The medium to long-term outlook for the sector is one of rapid changes in order to meet demand and increasing customer expectations.

NATIONAL GRID

UAE's installed power generation capacity is close to 10,000 MW but demand is growing by eight to ten per cent a year. Work on the Emirates Electric National Grid (EENG), which is to connect all power networks of the country,

is expected to be completed towards the end of 2002. The project is being carried out under the directions of the UAE Cabinet to link the internal networks of the emirates to one national grid. Phase one involved the link-up between Fujairah, Ra's al-Khaimah, Ajman and the central regions with Dubai. The second phase will entail merging the Abu Dhabi and other networks into a national grid. An agreement has been signed with Electricité De France (EDF) to carry out the design study and consultancy services. EDF is studying the possible linkage points of the new grid, evaluating the status and stability of each network, and assessing the technical specifications and financial considerations of the project. It is also studying the possibility of connecting EENG with the grids of other GCC states.

The national grid is designed to meet the power demand in each emirate by exchanging surplus load between the inter-connected networks. It should help to reduce the rate of the spare generation capacity and result in significant savings in costs of operation and maintenance The power stations will share their excess or shortage of power. It has been agreed to establish an independent authority to manage and control the process of sharing power between the inter-connected power systems.

DESALINATION AND OTHER PROJECTS

Jebel Ali Desalination Upgrade

The Dubai Electricity and Water Authority (DEWA) has been executing the second phase of its Water Desalination and Electricity Generation Plant in Jebel Ali at a total cost of Dh2.1 billion. The project includes installation of three gas turbines along with three boilers to recover waste heat created during the process of electricity generation and two steam turbines to recycle the excess steam back into water, in addition to three units for water desalination. The additional turbines will generate 880 MW of power and 40 mgpd of water by 2003. The productive capacity of the entire plant after completion of this huge project will be 3800 MW of power and about 188 mgpd of water.

DEWA Receives ISO Certification

Dubai Electricity & Water Authority (DEWA) was awarded the ISO 9001:1994 certification by Bureau Veritas Quality International (BVQI) for the design, development, installation and servicing of their water and electricity systems and production and supply of water and electricity. The certification process for DEWA's various systems began four years ago and the DEWA management

decided last year to apply for a single common certification for its systems. The BVQI experts had been visiting DEWA every six months to check the functioning of six divisions and they found it feasible to provide the certification to all divisions at one time instead of individually. The technology used by DEWA ensures 80 per cent peak efficiency, which was close to the upper achievers in this field with 85 per cent being top of the scale. DEWA places a high priority on environmental protection and maximises its use of non-polluting natural resources such as solar power. Solar panels are being used in parking meters and traffic signals, night power supply and on isolated farms. It also uses the most recently developed low nitrogen oxide (NOX) burners in its gas turbines, helping to minimise NOX emissions.

Fujairah Desalination Plant

The world's largest reverse osmosis seawater desalination plant, with a 62 million cubic metre annual production capacity, is being built at Qidfa, in Fujairah, at a cost of Dh345 million. It is scheduled to commence freshwater production by June 2003. It forms part of a wider construction project for a 630 MW power plant that also requires a thermal desalination unit, and which is the brainchild of the UAE Offsets Programme (UOG), which has promoted the establishment of a joint venture, the Union Water and Electricity Company (UWEC), to own and manage the project. Preparation of the route for a 180 kilometre pipeline through the Hajar Mountains to Al Ain, with a short spur line to Dhaid, was well under way at the end of 2001. The two units of the Qidfa plant will boost the drinking water production capacity of Abu Dhabi and the Northern Emirates to 164 million cubic metres per year. It is the first time that membrane (physical filtration) and thermal (evaporation) technologies have been combined on this scale.

Dam Construction

Ten new dams in Fujairah, built under the directives of Sheikh Zayed, were due for completion in late 2001. They will protect against flood damage during winter and provide fresh water for drinking and agriculture. Twelve other new storage dams will help to supplement the main water supply for the whole of Fujairah emirate. The major dams are at Wadi Dalam with a capacity of 440,000 cubic metres, near Mirbah, which stores about 200,000 cubic metres and Romez with a capacity of 138,000 cubic metres, while other dams and recharge facilities have also been built in the Wadi Safad.

SOLAR ENERGY

The United Arab Emirates is blessed not only with abundant oil and gas reserves, but also with a 365-day supply of intense sunlight. The use of the sun as a source of energy has been established for over a hundred years, though it is only in the last decade that the technology has been developed to make the use of solar power a viable alternative to hydrocarbons. The UAE is now taking major steps to capture and use this energy.

The use of new solar technology, coupled with the UAE's vigorous stand on environmental issues, has created an awareness of the financial savings to be made in reduced dependence on oil and gas for power generation and of the environmental advantages of reduced CO_2 emissions.

Interest in solar energy was clearly evident at the Environment 2001 conference and exhibition, held in Abu Dhabi. Several of the exhibitors were from solar supply companies and all of the conference sponsors had dedicated solar sections. At the 2001 Sharjah Solar Energy Conference, incorporating the World Renewable Energy Congress, contributors coming from over 30 countries presented over 400 papers on different aspects of solar power. Meanwhile Sharjah University's Research Centre is concentrating on solar energy and is working to identify the country's needs.

And the interest is by no means all of an academic nature. A number of major bodies such as the Abu Dhabi National Oil Company (ADNOC), water and electricity departments, local municipalities and the telecommunications firm, ETISALAT, have already incorporated the use of solar technology within their systems. For example, the establishment of solar power links in the remote desert regions has meant that there are now very few locations in the country where mobile telephones cannot be used. This use of solar power within the telecommunications system saves over 260 tonnes of CO_2 emissions each year, an important contribution to the UAE's environmental policy and also in line with its commitments under the Kyoto agreement on reduced carbon emissions.

The hydrocarbons industry has embraced solar power for both onshore and offshore facilities. The use of solar energy onshore for remote telemetry, power for cathodic protection, remote monitoring systems and pipeline security has saved technicians many hours of driving to distant locations to check and monitor systems. The use of solar power on unmanned offshore oil platforms has also reduced the necessity of constant mechanical maintenance.

Solar power is not only restricted to remote locations. Major solar companies working with technical and academic UAE institutions, like BP Solar, are developing methods to incorporate large-scale solar power generation within new buildings. The glass in curtain-walled buildings can now be replaced with solar cells to help generate electricity to assist in the building's power requirements. When demand for power in the UAE is at its highest (from 12.00 to 15.00 hours) the solar panels are at their most efficient. Such use of solar power reduces demand on the national grid, while the aesthetics of the buildings themselves are unchanged.

TELECOMMUNICATIONS

In 1976, when ETISALAT was set up, there were only 33,000 fixed telephone lines. Today there are aapproximately 1.1 million. Meanwhile 1.7 million people subscribe to mobile phone services, which amounts to one in two of the population – one of the highest rates in the world. By the end of August 2001 there were 243,081 Internet subscribers. ETISALAT, which provides various telecommunications services, including telephone, fax, voice mail, GSM, WAP, Internet, e-commerce and cable vision services, believes that the present, already high, GSM penetration in the Emirates could grow still further to achieve a penetration of between 70 to 80 per cent and they are building a network to cater for such capacity requirements.

ETISALAT has earmarked approximately Dh1.4 billion to upgrade its infrastructure. A substantial portion of this has been allocated to finance expansion and modernisation of its core and access networks that include PSTN, GSM, smart network, e-commerce, Internet and multimedia services. ETISALAT is also concentrating on value-added services like e-WAP and the SMS messaging service. The company has also been evaluating third generation mobile phones prior to their planned introduction in 2003.

Thuraya

Thuraya, which stormed into the highly competitive field of satellite telecommunications in 2001, has plans to expand its 100-country network by 2002 or 2003. In October 2000, the firm – which had US$1.1 billion in funding – launched its first high-power GEO-mobile satellite, built by Boeing Satellite Systems with a footprint encompassing Europe, Central Asia, the Indian subcontinent and North and Central Africa. Thuraya's telephones and service agreements went on sale to the general public in July 2001. This represents the first phase of the UAE-based company's ambitious plans to occupy a leading position in global satellite communications. The next phase includes plans to launch a second satellite by 2003, with a possible launch in 2002 not ruled out. This will provide coverage to South East Asia together with North and South America. Thuraya was set up in 1997 as a private company owned by 18 telecom operators and investment firms, including Boeing Satellite Systems International Inc., a unit of the Boeing company, Germany's Deutsche Telepost Consulting and the state telecom firms of 11 Arab countries. Hughes Network Systems, a unit of Hughes Electronic Corporation, built the ground facilities and some of the 250,000 dual-mode satellite and GSM phones. Shareholders contributed US$500 million to Thuraya's capital and the firm took on a US$600 million bank loan, which matures in 2005, to make up the rest of its funding.

SEAPORTS AND SHIPPING

The UAE is a maritime nation, possessing almost 800 kilometres of coastline, bordering both the Arabian Gulf and the Arabian Sea. It is served by 16 commercial ports (including oil terminals) with a total capacity of over 70 million tons, together with many smaller fishing harbours. The chief shipping ports in Abu Dhabi are Mina Zayed (which is the main general cargo port located on Abu Dhabi island) together with the oil industry related marine terminals of Jebel Dhanna, Ruwais, Umm al-Nar, Das island, Zirku, and Mubarraz islands. Dubai has two major ports, Mina Rashid, close to Dubai city, on the south side of the entrance to the creek, and Jebel Ali, which is the largest man-made port in the world and home to a highly successful industrial free zone. Moving up the coast, Sharjah has two ports: the Gulf coast's Port Khalid and the eastern coast port of Khor Fakkan Container Terminal. The Port of Ajman is located next to Ajman city. Umm al-Qaiwain is served by Ahmed bin Rashid Port whilst Ra's al-Khaimah has Port Saqr. On the East Coast the Port of Fujairah is a substantial deepwater port and is regarded as an important eastern gateway to the UAE. Further north along this coast is Khor Fakkan, which we have already mentioned above, and finally Dibba, which is also managed by Fujairah Port Authority.

Restrictions Placed on Certain Flag Carriers

A UAE cabinet decision banned ships flying flags of ten countries from entering UAE ports or approaching the country's territorial waters as part of the country's efforts to prevent maritime pollution. Countries covered by the ban included Albania, Belize, Honduras, Georgia, Saint Vincent and Grenadines, Mauritius, Cambodia, Maldives, Comoro Islands and Bolivia. The decision stated that ships flying flags of these nations were banned from entering UAE ports, anchorage areas, territorial waters and the country's economic zone unless they carried valid classification certificates issued by the International Association of Classification Societies.

The new regulation stated that ships that were covered by the above ban, but in possession of licences issued by the Ministry of Communications, could continue to operate until the expiry of their contracts with relevant authorities. However, once the contracts ended they would not be renewed.

Dry Docks and Ship Building

Abu Dhabi Ship Building (ADSB), a UAE public joint stock company, which operates a shipbuilding yard in the Musaffah industrial zone, assembles various vessels, especially for the UAE Navy, which awarded a Dh40 million plus contract in 2001 for building three landing craft. The 64-metre vessels were locally designed and fitted with special features enabling them to comply with the multi-purpose requirements of the UAE Navy. They were the first vessels to be built in ADSB's newly expanded facilities.

Over the previous 12 months the company spent more than Dh180 million on a major expansion that quadrupled the size and capabilities of the shipyard. Improvements included a new steel production facility equipped with state-of-the-art steel cutting and forming equipment, together with new assembly halls and a 2000 tonne ship-lift and transfer system.

As a result of the development work ADSB can now build and repair ships up to 85 metres in length and over 2000 tonnes in weight. The company currently specialises in the construction and repair of sophisticated naval vessels as well as commercial workboats of many different types.

Dubai Drydocks provides a ship repair service in compliance with the highest standards of quality and reliability, at internationally competitive prices. It has achieved ISO 9002 Quality Management accreditation for its entire operations. The shipyard dry-docks and repairs over 200 vessels per year, including around 50 ULCCs / VLCCs, representing a significant percentage

of the total number of these large vessels annually available for dry-docking worldwide. The aggregate deadweight of all ships handled in a single year amounts to over 23 million tonnes.

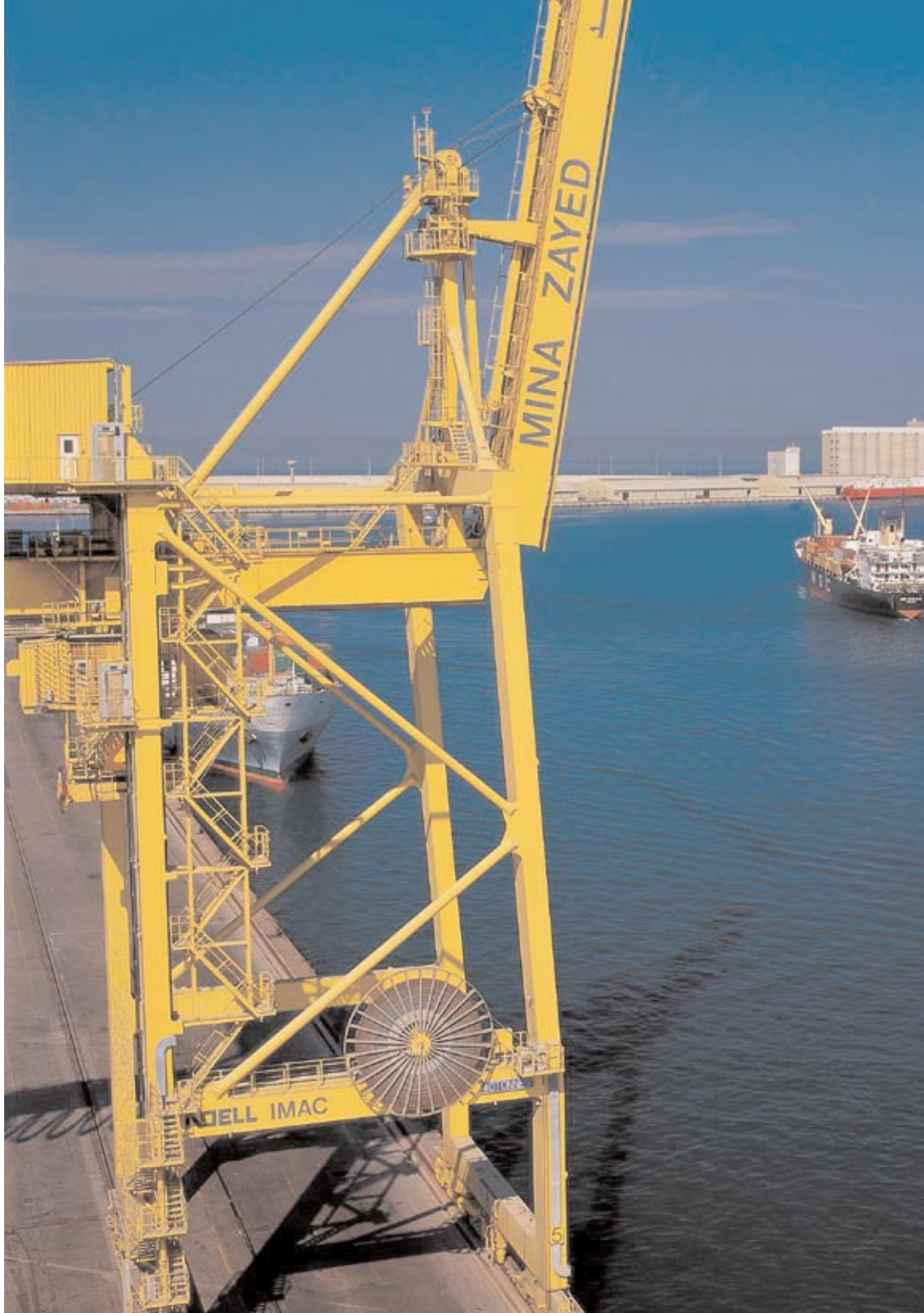
The labour force employed at Dubai Drydocks has risen from 300 to over 3500 during its 17 years of operation, giving an indication of the company's growth rate since its inauguration in 1983. Ship repair business is obtained from throughout the world with exclusive agents in 28 countries.

Dubai Drydocks recently completed the construction of four berthing pontoons for Dubai Ports Authority Jebel Ali Port Complex. The pontoons will be used as standoff devices for the new generation container vessels of above 6000 TEU capacity, approximately 100,000 dead weight tonnage and 14-metre draft. Consolidating the experience and expertise gained in construction of smaller aluminium craft, work commenced for a 35-metre oil rig service vessel manned by a crew of six, with passenger capacity of 31 and deck space for 20 tonnes of cargo. Meanwhile, on 26 August 2001, Dubai Drydocks signed a contract with Gulf Agency Company Dubai to design and build a double-hulled 45-metre specialised Lube Oil Carrier.

Port Developments

The Dubai government passed an Act in 2001 authorising the formation of the Public Corporation for Ports, Customs and Free Zones, to act as an independent financial and administrative entity, operated on a commercial basis. Under this legislation Dubai Customs Department, Dubai Ports Authority (DPA), Jebel Ali Free Zone Authority (JAFZA) and other related companies are to be part of the new corporation. According to Article 14 of the Act, each authority or company shall operate as an independent body corporate.

DPA's recent upgrade of cargo handling equipment at Jebel Ali and Port Rashid added three post-Panamax gantry cranes, six rubber-tyre gantry cranes (RTGs), eight reach stackers, 12 tractors, 36 marine high level wheel trailers and six roller trailers. It is also planning to increase the number of berths from the present 67 in order to accommodate the steady increase in cargo traffic. In addition it installed a state-of-the-art smart rail system utilising the Differential Global Positioning System (DGPS) to facilitate operation of the 40 RTGs that are currently in use at Dubai Port. The control system ensures that containers being moved by the RTGs are instantly locatable within the yard. The technology also facilitates automatic steering of the RTGs as they traverse the wharfs en route to their next location.



The E-Mirsal service at Jebel Ali Customs Centre is another example of cutting-edge electronics improving efficiency levels at Dubai's ports. It enables all customs transactions to be completed electronically and is part of the e-government initiative. Companies in JAFZ, registered with E-Mirsal, gain access to relevant customs documents in order to expedite completion of their imports, exports and re-exports.

Construction of two new warehouses at Hamriyah Port in Sharjah marked the start of a major development plan for the port area. A 311-room hotel, a hotel apartment building and two residential buildings along with beach facilities including restaurants and boardwalks, a 13,000 square metre 'auction arena' and a pre-cast facility are all part of the project. New wharves, a marina, bays and a control tower will also be developed to modernise the port and increase its efficiency.

The entire project will be completed in three years in three phases. The first phase involves construction of a twin tower building, each of 12 to 15 storeys, and a four-storey building for Dubai Customs. The second phase will comprise the two residential buildings with 300 to 400 flats while the hotel and beach developments will be constructed in the third phase.

Meanwhile, Sharjah's Hamriyah Free Zone became the first free zone in the world to win the ISO 14001 certificate for environmental safety.

AIRPORTS AND AIRLINES

The UAE presently has six international airports but a seventh is under development. The existing airports are in Abu Dhabi, Al Ain, Dubai, Sharjah, Ra's al-Khaimah, and Fujairah. The new one will be located in Ajman. The existing airports currently handle over 16 million passengers a year but major expansion at several of the airports, notably Abu Dhabi and Dubai, is expected to provide a combined handling capacity of over 50 million passengers within five years. Following the events of 11 September there has been a downturn in air traffic worldwide and the UAE has not been immune from the effects of this. Passenger movements through Dubai International Airport fell by 5 per cent, compared with a drop of over 40 per cent in the USA and 20 per cent in Europe. Cargo flights fell by 16 per cent and mail flights by 14 per cent.

Following the downturn in air traffic and the difficulties faced by various airlines, the UAE took positive action to ensure that its airports remained attractive to international airlines. Airports throughout the country dramatically reduced aircraft landing and parking charges for the last three months of 2001. Dubai Airport halved its fees, Sharjah International Airport reduced its rates on a 'special case' basis for the 28 carriers operating scheduled flights, while Ra's al-Khaimah and Fujairah airports authorities also announced big cuts in their aircraft handling charges.

Meanwhile airline insurance premiums rose and the Dubai government provided a US$2 billion insurance guarantee for Emirates Airline to ward off any interruption to its operations. In the last week of September 2001, Emirates Airline temporarily cancelled some 26 flights a week to 11 destinations in the Gulf, Europe and the Indian subcontinent, representing less than 10 per cent of its total weekly operations. However, the airline managed to maintain operations to all the 52 destinations on its network.

The medium to long-term outlook nevertheless remains positive with the UAE exploiting the advantages of its strategic location and its unique attractiveness as a travel destination for both business and leisure. The focus is on high quality, safe systems that work efficiently. Planning is forward-looking, aiming to meet the needs of a growing world population that is increasingly dependent upon aviation, both for movement of people and for freight or postal services.

Air Traffic Density and Flight Control

Air traffic over the UAE flight information region (FIR), in both eastern and western directions, increased by 46.7 per cent during October 2001 compared with October 2000, reflecting the confidence of the airlines in the safety of UAE airspace following the US-led attack on Afghanistan which made airlines avoid the Afghan FIR.

A new aircraft radar station was installed at Tarif, south of Abu Dhabi, with a radial range of 260 nautical miles. Due to come into operation in early 2002, the state-of-the-art radar will enhance air safety. Progress on the implementation of the reduced vertical separation minimum in the UAE's FIR remains on schedule to be implemented by 2003. Statistics issued in late 2001 indicated the following figures for the UAE aviation business: 4924 licences issued to pilots, engineers and cabin crew; 147 registered aircraft; seven registered organisations dealing in aircraft spare parts; five flying clubs; 46 licensed freight forwarders. One hundred and fifty-four examinations were held for pilots and 393 for engineers.

AIRPORTS

Abu Dhabi and Al Ain Airports

The International Standards Organisation awarded Abu Dhabi International Airport (ADIA), the Department of Civil Aviation and all its affiliates, the Quality Management Systems Certificate ISO 2000-9001 for the quality of its services and management. Rated as one of the most modern in the Middle East, ADIA is equipped to receive all types of aircraft and provide a full range of services to aircraft in normal as well as emergency circumstances. Flights are operated at regular intervals to most of the airports in the region.

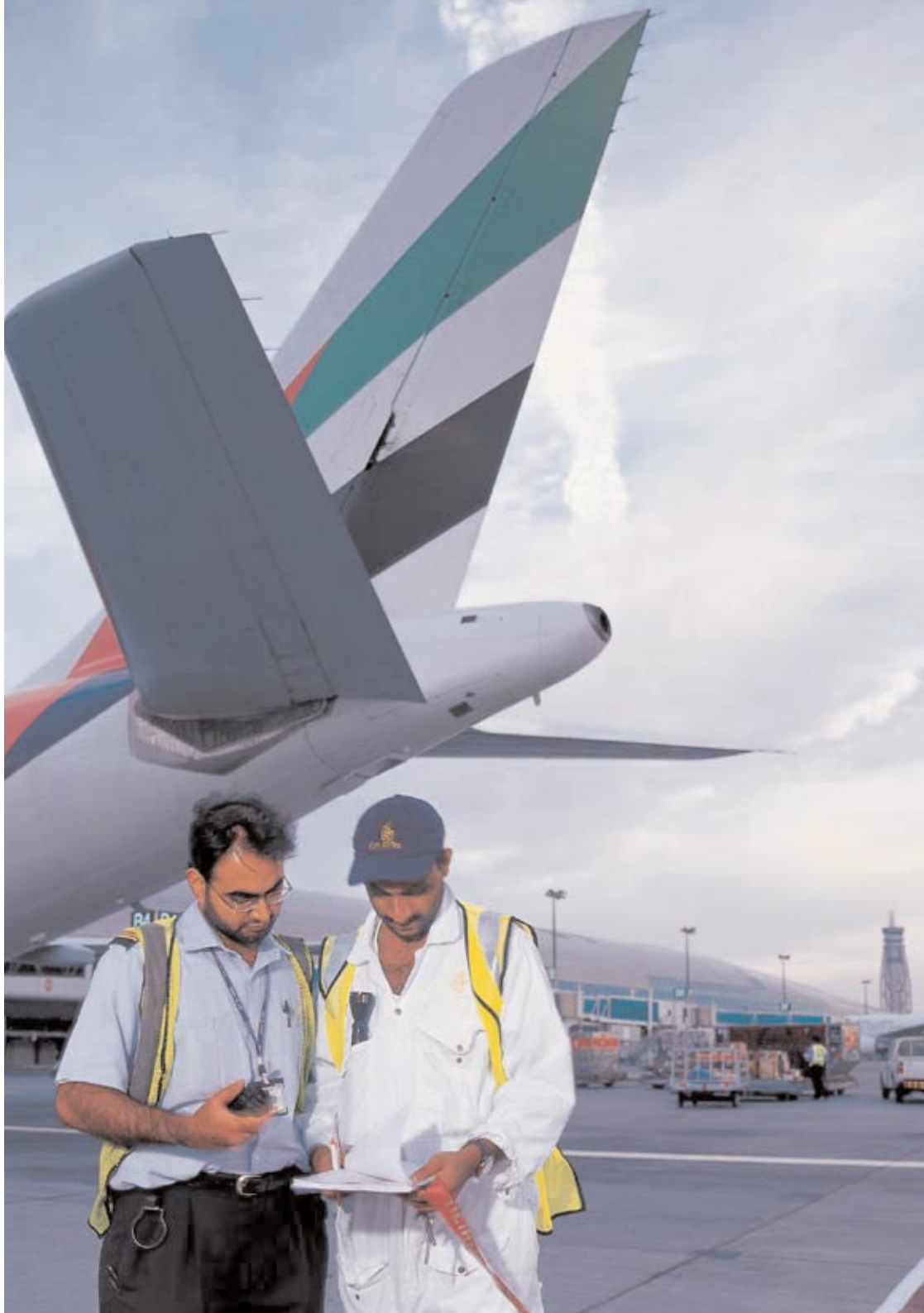
The airport is equipped with a long runway of 4100 metres and with four radar systems – two with a range of 200 nautical miles, an approach-control radar with a range of 80 nautical miles and a radar to monitor all aviation movements on the ground.

The passenger terminal is in a circular shape from which a series of telescopic air-bridges take passengers to their boarding gates. A large duty free shopping area is a feature of the airport.

Al Ain Airport is located 13 kilometres north-west of Al Ain city centre and information about its present operations is available at www.dcaauh.gov.ae. The main terminal building has a help desk, bank and bureau de change, ATM, public telephones, restaurant and coffee shop, together with a number of shops and a duty free zone. A medical centre is also located in the main terminal building, which is built on one level and is easily accessible to wheelchair users for whom special facilities are available.

Dubai Airport

The US$550 million Sheikh Rashid Terminal, completed in April 2000, boosted the airport's passenger handling by 14.6 per cent from 1999 to total 12.5 million passengers in 2000 and 13.5 million in 2001. The second phase of the expansion plan, costing US$1.4 billion, comprises a large underground cargo terminal with a capacity to handle 3 million tonnes of goods, as well as a third terminal exclusively for Emirates Airline passengers. Construction commences in 2002 with completion expected in 2005 or 2006. Terminal three, directly linked to concourse two, will be located beneath the apron and taxiway area. It will have first-class lounges and dedicated counters, restaurants, 180 check-in counters and 2600 underground parking spaces. When all the facilities are completed Dubai International Airport will be comfortably able to handle around 35 million passengers a year.



At the Routes 2001 Conference in Dublin, Ireland, Dubai International Airport won the award for 'Best in the World' in terms of its marketing activities. The Routes Airport Marketing Awards, now in its fifth year, recognised airports whose overall marketing activities left a positive impression in the industry and made a real impact on future network development plans. The award was based on the airport's market research activities, marketing communications activities and business case presentations for new market opportunities. The marketing effort included an advertising campaign which reached nearly a billion people via major TV channels such as CNN, BBC, CNBC and Eurosport; press advertisements in the Middle East, Europe, Asia and the US in publications including *Time, Newsweek* and *Business Week*; cinema advertising in the UK and Dubai; and banners on Emirates and Dubai International Airport web sites.

Meanwhile the airport also picked up other accolades. It was voted the Best International Airport 2001 in the world by readers of Condé Nast *Traveller*. The winning criteria were the best shopping/duty free facilities, pre-flight facilities and lounges. According to readers of Condé Nast: 'You like speeding through Singapore, but Dubai is where you most like to be delayed'.

Dubai Airport Duty Free began operations in December 1983 and recorded a first year turnover of Dh72 million (US$20 million). Following the opening of the new shopping complex in Sheikh Rashid Terminal in April 2000, turnover for 2001 reached a record Dh888 million (US$220 million), representing an 11 per cent increase over the previous year's sales and firmly placing the institution among the top seven airport retail operations worldwide in terms of turnover. Sales in electronic goods were up 40 per cent over 2000, accounting for 11 per cent of total sales. and a close contender for the lead position, which is traditionally retained by gold. The current holder of Frontier's 'Airport Retailer of the Year', Dubai Duty Free has won over 70 top international awards and was recently named the 'Middle East Retailer of the Year' at the Raven Fox Awards for Travel-Retail Excellence. The operation currently employs up to 900 staff, representing 30 nationalities and speaking 36 different languages.

Dubai Airport Free Zone Authority (DAFZA) recently became one of the few free zones in the region and the first in the UAE to receive ISO 9001:2000 certification.

A total of 1900 executive flights were made through the Dubai International Airport in 2000. The US, UK, Germany, France, Japan, Singapore, Malaysia and South Korea were the major destinations of these private flights.

Sharjah Airport

Freight handled through Sharjah International Airport fell by 18.16 per cent to 475,122 tonnes in 2000. The airport had recorded a cargo throughput of 580,550 tonnes the previous year, making it the premier air cargo hub in the Middle East. The decline in 2000 was anticipated by Sharjah Civil Aviation officials, since German carrier Lufthansa Cargo had scaled down flight frequency by around 20 per cent from the second quarter. A 9.18 per cent growth recorded in the fourth quarter of 2000 was connected with several new entrants making the airport their regional base. Sea-air cargo bucked the downward trend, rising by 1.71 per cent to 49,969 tonnes. Aircraft movements also held up relatively well, considering the fall-off in Lufthansa flight frequency. Total flight movements eased a nominal 2.84 per cent to 25,997. The regional slowdown also reflected on passenger movements, off 5.35 per cent at 948,207, against just over 1 million in 1999.

Ra's al-Khaimah International Airport

Ra's al-Khaimah International Airport is located some 15 kilometres from the city of Ra's al-Khaimah. Although it is smaller in size when compared with other airports of the UAE, it is well equipped and professionally run. Main carriers operating through the airport are Gulf Air, Egypt Air, Indian Airlines, Qeshm Air, Centrafrican Airlines, Kuban Air, plus a large number of CIS carriers. The main destinations served are Muscat, Bahrain, Doha, Cairo, Al Ain, Qeshm, Meshad, Uzbekistan, Krasnodar, Calicut, and numerous CIS destinations.

Fujairah International Airport

Fujairah International Airport recently launched a new cargo transport service using new equipment. The airport has obtained two towing tri-axle semi-trailers that can be used to transfer cargo from Fujairah to any point in the UAE and vice-versa. The two trailers have the capacity to carry 25 tonnes of bulk loaded and palletised cargo. Transport prices are very competitive compared to those involving normal pick-ups and trailers, where there is no insurance and less safety.

Ajman International Airport

Ajman International Airport is a new international airport under development in Ajman. The UK's Wiggins Group is carrying out the Dh367 million (US$100 million) build-operate-transfer (BOT) contract which involves building the terminal and airport infrastructure. The contract was signed in May 2001 and the terminal is planned to start operating in the second half of 2002. This will be the seventh commercial international airport in the UAE.

AIRLINES

Two major international airlines are based in the UAE. These are Emirates Airline and Gulf Air. In addition, a number of smaller locally based airlines and a large number of the world's major airlines use UAE airports, carrying both people and cargoes. As the world's airlines were already suffering from over-capacity and other difficulties prior to 11 September, some vital strategic planning and readjustment of targets has been inevitable since that date. Nevertheless, the UAE remains a crucial hub for international air travel and the region's airlines are well focused on meeting the challenges of the coming years.

Emirates Airline

Emirates Airline was named as the 'Best-scheduled Airline' by readers of the UK's *Daily Telegraph* in its Travel Awards 2001, pushing Singapore Airlines into second place from its previously held top position. Commenting on the award Sheikh Ahmed bin Saeed Al Maktoum, Chairman of the Dubai Civil Aviation Department and Emirates, said that though the airline collects a large number of awards each year, there is nothing better than those given directly by customers.

Emirates Airline's determination to keep on growing was confirmed during the Dubai 2001 Airshow when its chairman announced a major order, totalling almost US$15 billion, for 47 large aircraft. The order, divided between Airbus and Boeing, is also Dubai's vote of confidence in the future of aviation and in its own ability to continue to grow dramatically to about 100 aircraft by 2010, serving a traffic of some 50 million.

Emirates placed on firm order 22 giant double-decker Airbus A380s with an option for ten more in an order valued at US$7 billion. It also contracted to buy three more A330s for another US$415 million, and signed a letter of intent to buy eight A340s for around US$1 billion. Delivery commences in 2006. Total value of orders placed with Airbus stand at US$8.15 billion. From Boeing, Emirates signed a letter of intent to acquire 25 more Boeing 777 200s and 300s between 2004 and 2010. The order is worth US$6.6 billion.

Gulf Air

In September 2001, Gulf Air showed a decline of 6 per cent in passengers carried, 3.9 per cent in seat factor and 8 per cent in revenue passenger kilometres (RPK). However, the first two weeks of October 2001 indicated a decline of 20.4 per cent in passengers carried, 10.4 per cent in seat factor and 25.6 per cent in RPK. The comparisons were with the same months in 2000. These results were below break-even levels and the company has been taking steps to meet the new situation. Specific areas under review include route structures, schedules, fleet size, engineering and maintenance, finance and human resources, as well as other issues. The company plans to reduce its fleet from 30 to 26 aircraft during 2002, a move that is expected to result in the closure of some stations and reduction of flights throughout its network. Other cost-cutting measures include encouragement to long-serving employees to take up voluntary retirement and closure of some stations due to reductions in the operational network. A consultancy report on complete restructuring of Gulf Air is expected to be ready by the end of 2002. Gulf Air has retained aviation consultants Simat Helliesen and Eichner Inc. to undertake a comprehensive review of the airline and provide recommendations for restructuring the company and restoring its profitability. Established more than 50 years ago, initially as a commuter service carrier, Gulf Air serves more than 60 destinations in the Middle East, Asia, Europe, the US and Australia through direct service and through code-share alliances. The carrier's code-sharing partners include American Airlines, British Midland, Philippine Airlines, Royal Air Maroc, Cyprus Airways, Oman Air and Air Tanzania. Gulf Air operates a fleet of Airbus and Boeing wide-body aircraft. It is owned by Bahrain, Oman, Qatar and Abu Dhabi.

Air Taxis

A new luxury service using seaplanes between Abu Dhabi and Dubai is due to come into operation in 2002. Operated by Emarat Link Aviation, the new air shuttle service intends to fly passengers from the heart of the capital to the centre of Dubai with 12 flights a day, providing an easy and swift link between the two cities. The two floating terminals will be located next to the Hiltonia Beach Club on Abu Dhabi Corniche and at the Dubai Creek Golf and Yacht Club. Emarat Link will also offer additional services for passengers such as car rental facilities in both Abu Dhabi and Dubai.

Air Training

Emirates announced the launch of a US$100 million joint venture with Canada's CAE to set up a Gulfstream business jet training centre in Dubai. Emirates also agreed to build and jointly operate the centre, which will be adjacent to the existing Emirates Training Facility. The initial investment under the ten-year agreement is US$100 million, with equal participation by CAE and Emirates. The facility is to commence operation in 2003. When completed, the centre will be a world-class training facility incorporating modern classrooms and briefing rooms. It will initially house five full flight simulators with provision for seven more. The main target will be the Middle East and Africa but the centre, which is the only one of its kind outside America, will be open to applicants from many countries.

The Abu Dhabi-based Khalifa bin Zayed Air College and the Centre of Excellence for Applied Research & Training (CERT) of the Higher Colleges of Technology have collaborated to provide a specially tailored two-year training programme at Al Ain Air Force Cadet Training facility. CERT and the Khalifa bin Zayed Air College are working together to deliver specialised programmes of instruction in a variety of aeronautical-related subjects. The training will be provided primarily to UAE nationals. As part of the collaboration agreement, CERT has equipped the Air College with five state-of-the-art computer labs, an advanced multimedia lab and a high-speed local area network (LAN).